WHAT IS CLAIMED IS:

1. A method for detecting airflow reversal in a sump system of a gas turbine engine, said method comprising:

positioning a first pressure sensor at a sump vent to sense a discharge flow pressure from a sump within the sump system;

positioning a second pressure sensor in the sump to sense a pressure in the sump;

comparing the sensed pressures obtained from the first and second pressure sensors to determine a pressure difference; and

comparing the pressure difference to a predetermined maximum allowable pressure difference.

- 2. A method in accordance with Claim 1 wherein positioning a second pressure sensor in the sump comprises positioning a second pressure sensor in an oilwetted environment.
- 3. A method in accordance with Claim 1 wherein positioning a second pressure sensor in the sump further comprises sensing the pressure in a pressure line.
- 4. A method in accordance with Claim 3 wherein sensing the pressure through a pressure line further comprises purging the pressure line with air prior to sensing the pressure.
- 5. A method in accordance with Claim 1 wherein positioning a second pressure sensor in the sump comprises positioning a second pressure sensor at a second sump vent.
- 6. A method in accordance with Claim 1 wherein comparing the sensed pressures comprises:

transmitting a pressure signal from each of the first and second pressure sensors to an engine monitoring system;

determining a pressure difference in the monitoring system; and displaying the pressure difference.

- 7. An apparatus for detecting sump airflow reversal in a vented sump in a gas turbine engine, said apparatus comprising:
- a first pressure sensor coupled in flow communication with a sump vent for sensing a sump pressure at said sump vent, said first pressure sensor configured to produce a first signal indicative of the sensed pressure;

a second pressure sensor within said sump for sensing a sump pressure within said sump, said second pressure sensor configured to produce a second signal indicative of the sensed pressure; and

an output device coupled to said first and second pressure sensors, said output device configured to receive and display pressure indications based on the first and second signals.

- 8. An apparatus in accordance with Claim 7 wherein said second pressure sensor is disposed in an oil-wetted environment.
- 9. An apparatus in accordance with Claim 7 wherein said sump comprises a second sump vent, said second pressure sensor coupled in flow communication with said second sump vent for sensing a sump pressure therethrough.
- 10. An apparatus in accordance with Claim 9 wherein said second sump vent defines a drain path for said sump.
- 11. An apparatus in accordance with Claim 7 wherein said output device is further configured to:

determine a pressure difference between the first and second pressure signals; and

display an indication of the pressure difference.

- 12. An apparatus in accordance with Claim 11 wherein said output device is further configured to compare the pressure difference to a predetermined maximum allowable pressure difference.
 - 13. A gas turbine engine comprising:

a compressor;

a turbine;

a shaft assembly coupling said compressor and said turbine;

a support assembly rotatably supporting said shaft assembly;

a sump system for collecting oil from said support assembly, said sump system comprising a detection system for detecting operating pressures in said sump system; and

an engine monitoring system coupled to said detection system for detecting air flow reversal in said sump system.

- 14. An engine in accordance with Claim 13 wherein said detection system comprises:
- a first pressure sensor coupled in flow communication with a sump vent for sensing a sump pressure at said sump vent, said first pressure sensor configured to produce a first signal indicative of the sensed pressure;
- a second pressure sensor within said sump for sensing a sump pressure within said sump, said second pressure sensor configured to produce a second signal indicative of the sensed pressure; and

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said monitoring system is configured to receive the first and second signals from said first and second pressure sensors.

- 15. An engine in accordance with Claim 14 wherein said monitoring system is further configured to determine a pressure difference based on the first and second signals.
- 16. An engine in accordance with Claim 14 wherein said second pressure sensor is positioned in an oil-wetted environment.
- 17. An engine in accordance with Claim 14 wherein said sump includes a second vent, said second pressure sensor in flow communication with said second vent for sensing a sump pressure therethrough.
- 18. An engine in accordance with Claim 14 wherein said second vent defines a drain path for said sump.